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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,627	02/27/2004	Paul W. Brazis	CML01416T	6504
22917	7590	05/18/2005	EXAMINER	
MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			TRA, ANH QUAN	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/788,627

Applicant(s)

BRAZIS ET AL.

Examiner

Quan Tra

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/27/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 16 and 17 are indefinite because there is no connection between the transistors in the inverting circuit. Further, it is unclear that the limitations "at least one of the at least three organic transistors" in lines 4-5, 6-7, 8-9 and 10-11 of claim 1 are the same transistor, in lines 5-6, 8, 10 and 12 of claim 16 are the same transistor, and lines 5-6, 8, 10 and 11-12 are the same transistor.

Claims 2-15 are rejected as including the indefiniteness of claim 1.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1- are rejected under 35 U.S.C. 103(a) as being unpatentable over Egawa (USP 4547681) in view of Geens et al. (US 2003/0085397)

As to claim 1, Egawa's figure 8 shows an semiconductor inverting circuit, comprising at least three transistors, one of which is an input transistor (DNTR4) having a gate to which is

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coupled an input terminal (IT2), an output terminal (OT1) coupled to a first electrode of at least one of the at least three transistors, a reference supply voltage input (ground) coupled to a second electrode of at least one of the at least three transistors, a first positive supply voltage input (+VD) coupled to a second electrode of at least one of the at least three transistors, and a negative supply voltage input coupled to a first electrode of at least one of the at least three transistors. Thus, figure 8 shows all limitations of the claim except for the transistors are organic transistors. However, Geens et al. teaches that organic transistor has benefit of low cost. Therefore, it would have been obvious to one having ordinary skill in the art to use organic transistors for Egawa et al.'s transistors for the purpose of saving cost.

As to claim 2, the modified Egawa's figure 8 shows that absolute values of voltages coupled to the first positive supply voltage input and the negative supply voltage input with reference to a voltage coupled to the reference supply voltage input are substantially equal.

As to claim 3, the modified Egawa's figure 8 shows that an absolute gain of the organic semiconductor inverting circuit is greater than one over a range of voltage applied to the input terminal (the gain of circuit is 1 which is greater than one over $|VD|$).

As to claim 4, the modified Egawa et al.'s figure 8 fails to show that the inverter circuit is used in a ring oscillator. However, it is seen as an intended use of using the modified Egawa et al.'s inverter circuit in a ring oscillator in order to take the advantage of the modified Egawa et al.'s figure 8 benefit, such as low cost.

As to claim 13, it is inherent that the on/off ratio of at least one organic transistor of the three organic transistors is less than 100,000 (it is assume that the on and of times of the transistor are equal. Thus, the ratio is about 1).

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As to claim 14, it is inherent that at least one element of each of the at least three organic transistors is formed by a printing process (see US 20050003574).

As to claim 15, it is seen as an obvious design preference to select at least one element of each of the at least three organic transistors is deposited by one of the group of processes consisting of gravure, flexography, intaglio, screen printing, micro dispensing, micro contact printing, and lithographic printing.

As to claim 16, the modified Egawa et al.'s figure 8 fails to show at least one of a NAND, NOR, AND, and OR circuit coupled to the organic semiconductor inverting circuit. However, it would have been obvious to one having ordinary skill in the art to coupled one of a NAND, NOR, AND, and OR circuit coupled to the organic semiconductor inverting circuit for the purpose of further AND, NOR NAND or NOR the output of the inverting circuit with other signal.

As to claim 17, it is inherent that ring oscillator has odd number of the one or more organic semiconductor inverting circuits are coupled in series (see the rejection of claim 4).

Allowable Subject Matter

5. Claims 5-12 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5-12 would be allowable because the prior art fails to teach the detail of the connection of the transistors in the organic inverting circuit as claimed.

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Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are cited as interest because they show some circuits analogous to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 571-272-1755. The examiner can normally be reached on 8:00 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QUAN TRA
PRIMARY EXAMINER
ART UNIT 2816

May 13, 2005